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PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Timothy L. Harris

Title: LINKED-LIST IMPLEMENTATION OF A DATA STRUCTURE WITH
CONCURRENT NON-BLOCKING INSERT AND REMOVE
OPERATIONS

Application No.: 09/710,218

Filed: November 10, 2000

Examiner: Zhen, Li B.

Group Art Unit: 2194

Atty. Docket No.: 004-4896

Confirmation No.: 4731

February 9, 2006

Mail Stop Amendment
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INFORMATION DISCLOSURE STATEMENT
37 C.F.R. § 1.97(c)

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- ☐ Form(s) PTO/SB/08A (N/A page(s), with copy of no reference(s)).
- ☒ Form(s) PTO/SB/08B (3 page(s), with copy of 44 reference(s)).
- ☐ Listing of Pending Applications (N/A page(s), with copy of no application(s)).
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Steven R. Gilliam

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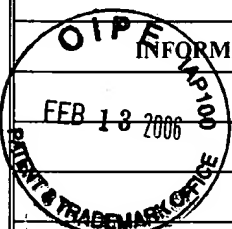
Respectfully submitted,



Steven R. Gilliam, Reg. No. 51,734
Attorney for Applicant(s)
(512) 338-6320 (direct)
(512) 338-6300 (main)
(512) 338-6301 (fax)

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PTO/SB/08B (Substitute for form 1449/PTO)		Attorney Docket No.: 004-4896
		Application No.: 09/710,218
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		First Named Inventor: Timothy L. Harris
		Filing Date: November 10, 2000
		Group Art Unit: 2194
		Examiner Name: Zhen, Li B
Sheet 1 of 3		Date Submitted: February 9, 2006



NON PATENT LITERATURE DOCUMENTS


Examiner Initials*	Cite No. ¹	Include name of author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AA	AFEK, Yehuda, et al., "Atomic snapshots of shared memory." In <i>Journal of ACM</i> , Vol. 40, No. 4, pp. 873-890 September 1993.	
	AB	AFEK, Yehuda, et al., "Wait-free made fast." In <i>Proceedings of the Twenty-Seventh Annual ACM Symposium on Theory of Computing</i> , Las Vegas, Nevada, United States, May 29 - June 01, 1995, pp. 538-547, ACM Press, New York, NY.	
	AC	AFEK, Yehuda, et al., "Disentangling multi-object operations." In <i>Proceedings of the Sixteenth Annual ACM Symposium on Principles of Distributed Computing</i> , Santa Barbara, California, United States, August 21 - 24, 1997, pp. 111-120, ACM Press, New York, NY.	
	AD	AGESEN, Ole, et al., "An efficient meta-lock for implementing ubiquitous synchronization." In <i>Proceedings of the 14th ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications</i> , Denver, Colorado, United States, November 01 - 05, 1999, pp. 207-222, ACM Press, New York, NY.	
	AE	ATTIYA, Hagit and Dagan, Eyal, "Universal operations: unary versus binary." In <i>Proceedings of the Fifteenth Annual ACM Symposium on Principles of Distributed Computing</i> , Philadelphia, Pennsylvania, United States, May 23 - 26, 1996, pp. 223-232, ACM Press, New York, NY.	
	AF	ATTIYA, Hagit and Rachman, Ophir, "Atomic snapshots in O(n log n) operations." In <i>Proceedings of the Twelfth Annual ACM Symposium on Principles of Distributed Computing</i> , Ithaca, New York, United States, August 15 - 18, 1993, pp. 29-40, ACM Press, New York, NY.	
	AG	BACON, David F., et al., "Thin locks: featherweight synchronization for Java." In <i>Proceedings of the ACM SIGPLAN 1998 Conference on Programming Language Design and Implementation</i> , Montreal, Quebec, Canada, June 17 - 19, 1998, pp. 258-268, ACM Press, New York, NY.	
	AH	BARNES, Greg, "A method for implementing lock-free shared-data structures." In <i>Proceedings of the Fifth Annual ACM Symposium on Parallel Algorithms and Architectures</i> , Velen, Germany, June 30 - July 02, 1993, pp. 261-270, ACM Press, New York, NY.	
	AI	DETLEFS, David, "Garbage Collection and Run-time Typing as a C++ Library." In <i>Proceedings of the 1992 USENIX C++ Conference</i> , pp. 37 - 56, Portland, Oregon, August 1992.	
	AJ	AFEK, Yehuda, et al., "Atomic snapshots of shared memory." In <i>Journal of ACM</i> , Vol. 40, No. 4, pp. 873-890, September 1993.	
	AK	BEN-ARI, Mordechai, "On-the-Fly Garbage Collection: New Algorithms Inspired by Program Proofs," <i>Lectures Notes in Computer Science</i> , Vol. 140, pp. 14-22, Springer-Verlag, Berlin, Heidelberg, Germany, 1982.	
	AL	BEN-ARI, Mordechai, "Algorithms for On-the-Fly Garbage Collection," <i>ACM Transactions on Programming Languages and Systems</i> , Vol. 6, No. 3, pp. 333-344, July 1984.	
	AM	BERSHAD, B. N., "Practical Considerations for Non-Blocking Concurrent Objects," In <i>Proceedings of the 13th IEEE International Conference on Distributed Computing Systems</i> , Los Alamitos, California, United States, May 25 - 28, 1993, pp. 264-273, IEEE Computer Society Press.	
	AN	BLUMOFFE, Robert D. et al., "Verification of a Concurrent Deque Implementation," Technical Report TR99-11, University of Texas at Austin, Department of Computer Sciences, pp. 1-20, June 1999.	
	AO	BROWN, Jeremy Hanford, "Memory Management on a Massively Parallel Capability Architecture," Thesis Proposal, MIT Artificial Intelligence Laboratory, pp. 1-68, December 3, 1999, retrieved from URL: < http://www.ai.mit.edu/projects/aries/Documents/jhbrown_thesis_proposal.pdf >.	
	AP	CHUANG, Tyng-Ruey et al., "Real-Time Deques, Multihead Turing Machines, and Purely Functional Programming," In <i>Proceedings of the Conference on Functional Programming Languages and Computer Architecture</i> , Copenhagen, Denmark, June 9-11, 1993, pp. 289-298, ACM Press, New York, NY.	
	AQ	DETLEFS, David, "Garbage Collection and Run-time Typing as a C++ Library," In <i>Proceedings of the 1992 Usenix C++ Conference</i> , Digital Equipment Corporation Systems Research Center, 20 pages, June 18, 1992 retrieved from URL: < http://citeseer.ist.psu.edu/detlefs92garbage.html >.	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

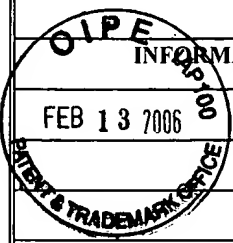
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	AA	DETREVILLE, John, "Experience with Concurrent Garbage Collectors for Modula-2+," Digital Equipment Corporation Systems Research Center Tech Report, No. 64, 68 pages, Nov. 22, 1990 (online), retrieved April 1, 2002 from URL: <ftp://gatekeeper.research.compaq.com/pub/DEC/SRC/research-reports/SRC-064.pdf>.	
	AB	DIJKSTRA, E., "Solution to a Problem in Concurrent Programming Control," Communications of the ACM, Vol. 8, No. 9, p. 569, 1965.	
	AC	GOETZ, Brian, "A First Look at JSR 166: Concurrency Utilities," 3 pages, March 1, 2004. retrieved from URL: <http://today.java.net/jpt/a/76>.	
	AD	GOODMAN, James R., et al., "Efficient Synchronization Primitives for Large-Scale Cache-Coherent Multiprocessors," In <i>Proceedings of the Third International Conference on Architectural Support for Programming Languages and Operating Systems</i> , New York, NY, Boston, MA, United States, April 3-6, 1989, pp. 64-75, ACM Press.	
	AE	GOTTLEIB, Allan, et al., "Basic Techniques for the Efficient Coordination Of Very Large Numbers Of Cooperating Sequential Processors," <i>ACM Trans. Program. Language Systems</i> , Vol. 5, No. 2, pp. 164-189, April 1983.	
	AF	HERLIHY, Maurice P., et al., "Linearizability: A Correctness Condition for Concurrent Objects," <i>ACM Transactions On Programming Languages and Systems</i> , Vol. 12, No. 3, pp. 463-492, July 1990.	
	AG	HERLIHY, Maurice P., "Wait-Free Synchronization," <i>ACM Transactions On Programming Languages and Systems</i> , Vol. 11, No. 1, pp. 124-149, January 1991.	
	AH	HERLIHY, Maurice P., et al., "Transactional Memory: Architectural Support for Lock-Free Data Structures," Technical Report CRL 92/07, Digital Equipment Corporation, 12 pages, Cambridge Research Lab, 1992.	
	AI	HERLIHY, Maurice P., et al., "Lock-Free Garbage Collection for Multiprocessors," <i>IEEE Transactions on Parallel and Distributed Systems</i> , Vol. 3, No. 3, pp. 229-236, May 1992.	
	AJ	HERLIHY, Maurice P., "A Methodology for Implementing Highly Concurrent Data Objects," <i>ACM Transactions on Programming Languages and Systems</i> , Vol. 15, No. 5, pp. 745-770, November 1993.	
	AK	HESSSELINK, W. H. et al., "Waitfree distributed memory management by Create, and Read Until Deletion ({CRUD})," Technical Report: SEN-R9811, Dept. of Math. and Computing Science, University of Groningen, The Netherlands, 21 pages, Dec. 31, 1998, retrieved from URL: <http://citeseer.ist.psu.edu/hesselink98waitfree.html>.	
	AL	ISRAELI, Amos et al., "Disjoint-Access-Parallel Implementations of Strong Shared Memory Primitives," In <i>Proceedings of the 13th Annual ACM Symposium on Principles of Distributed Computing</i> , Los Angeles, CA, United States, August 14-17, 1994, pp. 151-160, ACM Press, New York, NY.	
	AM	LAMPORT, Leslie, "How to Make a Multiprocessor Computer that Correctly Executes Multiprocess Programs," <i>IEEE Transactions on Computers</i> , Vol. c-28, No. 9, pp. 690-691, September 1979.	
	AN	LAMPORT, Leslie, "A Fast Mutual Exclusion Algorithm," <i>ACM Transactions on Computer Systems</i> , Vol. 5, No. 1, pp. 1-11, 1987.	
	AO	LOTAN, Itay et al., "Skiplist-Based Concurrent Priority Queues," In <i>Proceedings of the 14th International Parallel and Distributed Processing Symposium</i> , pp. 263-268, IEEE Computer Society, Washington, D.C., 2000.	
Examiner Signature		Date Considered	

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	AA	Motorola. "M68040 User's Manual," 22 pages1993.	
	AB	MELLOR-CRUMMEY, John, et al., "Algorithms for Scalable Synchronization on Shared-Memory Multiprocessors, " In <i>ACM Transactions on Computer Systems</i> , Vol. 9, No. 1, pp. 21-65, February 1991.	
	AC	MOIR, Mark et al., "Wait-Free Algorithms for Fast, Long-Lived Renaming," <i>Science of Computer Programming</i> , Vol. 25, No. 1, pp. 1-39, August 1995.	
	AD	MOIR, Mark, "Practical implementation of non-blocking synchronization primitives," In <i>Proceedings of the Sixteenth Annual ACM Symposium on Principles of Distributed Computing</i> , Santa Barbara, CA, United States, August 21-24, 1997, pp. 219-228, ACM Press, New York, NY.	
	AE	MOIR, Mark, "Transparent Support for Wait-Free Transactions," In <i>Proceedings of the 11th International Workshop on Distributed Algorithms</i> , pp. 305-319, Springer-Verlag, London, United Kingdom, 1997.	
	AF	PUGH, William, "Concurrent Maintenance of Skip Lists," CS-TR-2222.1, Institute for Advanced Computer Studies, Dept. of Computer Science, University of Maryland, pp. 1-13, College Park, Maryland, United States, June 1990.	
	AG	PUGH, William, "Skip Lists: A Probabilistic Alternative to Balanced Trees," <i>Communications of the ACM</i> , Vol. 33, No. 6, pp. 668-676, June 1990.	
	AH	RINARD, Martin C., "Effective Fine-Grain Synchronization for Automatically Parallelized Programs Using Optimistic Synchronization Primitives," <i>ACM Trans. Computer Systems</i> , Vol. 17, No. 4, pp. 337-371, November 1999.	
	AI	SAKS, Michael et al., "Optimal Time Randomized Consensus - Making Resilient Algorithms Fast in Practice," In <i>Proceedings of the 2nd ACM SIAM Symposium on Discrete Algorithms</i> , pp. 351-362, Philadelphia, Pennsylvania, United States, January 1991.	
	AJ	SHANN, Chien-Hua et al., "A Practical Nonblocking Queue Algorithm Using Compare-and Swap," In <i>Proceedings of the Seventh International Conference on Parallel and Distributed Systems</i> , pp. 470-475, IEEE Computer Society, Washington, D.C., 2000.	
	AK	SHAVIT, N., et al., "Software Transactional Memory," <i>Distributed Computing</i> , Vol. 10, No. 2, pp. 99-116, February 1997.	
	AL	TUREK, John et al., "Locking Without Blocking: Making Lock Based Concurrent Data Structure Algorithms Nonblocking," In <i>Proceedings of the Eleventh ACM SIGACT-SIGMOD-SIGART Symposium on Principles of Database Systems</i> , San Diego, California, United States, June 2 - 5, 1992, pp. 212-222, ACM Press, New York, NY.	
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